

## File S1. Supplementary Methods

We searched the literature using Web of Science (July 2021) for articles which reported on a restoration project or research that included any metric of amphibian success. We included multiple terms for geographically isolated wetlands. Our final search string was 'Restoration AND (frog OR salamander OR amphibian OR anuran OR urodel) AND ("geographically isolated" OR "ephemeral" OR "vernal pool" OR "temporary wetland" OR "isolated wetland" OR "seasonal wetland" OR "playa" OR "Carolina bay" OR "prairie pothole" OR "limesink"). Following this initial search and review of articles for relevance, we repeated our search within selected journals (Restoration Ecology, Freshwater Biology, Ecological Applications, Ecosphere, Hydrological Processes, Wetlands Ecology and Management; December 2021). In recognition of the diverse terms for geographically isolated wetlands and the dispersed nature of the literature, for each included article we reviewed the citations to identify any additional relevant literature. Using this process, we identified 30 articles which met our search criteria. We also included 1 unpublished account because it was cited in published literature. An additional reference was provided by a reviewer. The final list of included studies is given in Supplementary Table S1.

Table S1. List of published (n = 31) and unpublished (n = 1) accounts of restoration outcomes for amphibians in geographically isolated wetlands considered in this review. \*Articles which did not list restoration methods.

Citation	Citation Number in Text	Research location	Habitat/Wetland Type	Time-frame	Amphibian success metric
Balas, C. J.; Euliss Jr., N. H.; Mushet, D. M. Influence of Conservation Programs on Amphibians Using Seasonal Wetlands in the Prairie Pothole Region. <i>Wetlands</i> <b>2012</b> , <i>32</i> , 333–345.	54	Prairie pothole region of North America	prairie potholes	10 + years	occupancy
Beas, B. J.; Smith, L. M. Amphibian Community Responses to Playa Restoration in the Rainwater Basin. <i>Wetlands</i> <b>2014</b> , <i>34</i> (6), 1247–1253.	59	Rainwater Basin, Nebraska	playas in natural grassland and croplands	2 – 11 years	species richness
Beebee, T. J. C. Changes in Dewpond Numbers and Amphibian Diversity over 20 Years on Chalk Downland in Sussex, England. <i>Biol. Conserv.</i> <b>1997</b> , <i>81</i> (3), 215–219.	62	Chalk hills, Sussex Downs, southern England	dewponds, artificial but created in 17th century	unclear	presence
Chandler, H. C.; Colon-Gaud, J. C.; Gorman, T. A.; Carson, K.; Haas, C. A. Does Long-Term Fire Suppression Impact Leaf Litter Breakdown and Aquatic Invertebrate Colonization in Pine Flatwoods Wetlands? <i>PeerJ</i> <b>2021</b> , <i>9</i> .	98	Eglin Air Force Base, Florida, USA	ephemeral wetlands, pine uplands	unclear/on-going	prey abundance
Cooke, A. S. Monitoring a Breeding Population of Crested Newts ( <i>Triturus cristatus</i> ) in a Housing Development. <i>Herpetol. J.</i> <b>1997</b> , <i>7</i> (2), 37–42.	64	Stanground, England	ponds, possibly created but unknown; former pasture converted to housing development	9 years	abundance
Denton, J. S.; Hitchings, S. P.; Beebee, T. J. C.; Gent, A. A Recovery Program for the Natterjack Toad ( <i>Bufo calamita</i> ) in Britain. <i>Conserv. Biol.</i> <b>1997</b> , <i>11</i> (6), 1329–1338.	48	Heaths and dunes, England, Scotland, Wales	ephemeral wetlands; dunes, heath and salt marsh surrounds	3 years	occupancy, population size
Gorman, T. A.; Haas, C. A.; Himes, J. G. Evaluating Methods to Restore Amphibian Habitat in Fire-Suppressed Pine Flatwoods Wetlands. <i>Fire Ecol.</i> <b>2013</b> , <i>9</i> (1), 96–109.	83	Eglin Air Force Base, Florida, USA	ephemeral wetlands, pine uplands	2 years	species richness
Green, A. W.; Hooten, M. B.; Grant, E. H. C.; Bailey, L. L.; Cadotte, M. Evaluating Breeding and Metamorph Occupancy and Vernal Pool Management Effects for Wood Frogs Using a Hierarchical Model. <i>J. Appl. Ecol.</i> <b>2013</b> , <i>50</i> (5), 1116.	63	Patuxent Research Refuge, Maryland, USA	vernal pools, deciduous forest uplands	1 year	breeding, metamorph production probabilities

Hanlin, H. G.; Martin, F. D.; Wike, L. D.; Bennett, S. H. Terrestrial Activity, Abundance and Species Richness of Amphibians in Managed Forests in South Carolina. <i>Am. Midl. Nat.</i> <b>2000</b> , 143 (1), 70–83.	85	Lost Lake, Savannah River Site, South Carolina, USA	Carolina Bay, 3 upland forest types (loblolly, slash, mixed hardwood)	3 – 6 years	species diversity, evenness
Klaus, J. M.; Noss, R. F. Specialist and Generalist Amphibians Respond to Wetland Restoration Treatments. <i>J. Wildl. Manage.</i> <b>2016</b> , 80 (6), 1106–1119.	84	Francis Marion National Forest, South Carolina, USA	geographically isolated wetlands, longleaf pine uplands	5 years	abundance by species, relative abundance, richness of specialists vs. generalists
Means, R. C.; Means, R. P. M.; Beshel, M.; Mendyk, R.; Hill, P.; Hoffman, M.; Reichling, S.; Summerford, B. A Conservation Strategy for the Imperiled Striped Newt ( <i>Notophthalmus Perstriatus</i> ) in the Apalachicola National Forest, Florida, Seventh Annual Report. <b>2017</b> , No. December.	49	Apalachicola National Forest, Florida, USA	geographically isolated wetlands, longleaf pine uplands	5 years	breeding, metamorph presence
Mitchell, J. C. Restored Wetlands in Mid-Atlantic Agricultural Landscapes Enhance Species Richness of Amphibian Assemblages. <i>Journal of Fish and Wildlife Management</i> <b>2016</b> 7 (2), 490–498.	*	Mid-Atlantic (Delaware, Maryland, Virginia, North Carolina), USA	ephemeral wetlands	unknown	richness, relative abundance
Mullin, S. J.; Towey, J. B.; Szafoni, R. E. Using Rotenone™ to Enhance Native Amphibian Breeding Habitat in Ponds (Illinois). <i>Ecol. Restor.</i> <b>2004</b> , 22 (4), 305–306.	99	Illinois, USA	Minimal description: "in ravines", "small, shallow", Pond D semi-permanent	2 years	abundance
Mushet, D. M.; Euliss Jr., N. H.; Stockwell, C. A. Mapping Anuran Habitat Suitability to Estimate Effects of Grassland and Wetland Conservation Programs. <i>Copeia</i> <b>2012</b> , 2012, 322–331.	86	Northern Great Plains, North Dakota, USA	grasslands, cropland	Unknown, expiring easements	habitat suitability
Nyberg, D.; Lerner, I. Revitalization of Ephemeral Pools as Frog Breeding Habitat in an Illinois Forest Preserve. <i>J. Iowa Acad. Sci. IAS</i> <b>2000</b> , 107 (3–4), 187.	55	Illinois, USA	permanent and ephemeral wetlands, oak dominated forests	2 – 4 years	Presence of calling
Petranka, J. W.; Harp, E. M.; Holbrook, C. T.; Hamel, J. A. Long-Term Persistence of Amphibian Populations in a Restored Wetland Complex. <i>Biol. Conserv.</i> <b>2007</b> , 138 (3–4), 371–380.	51	Tulula Wetlands Mitigation Bank, North Carolina, USA	wetland complex with ephemeral to permanent ponds	13 years	egg mass counts for focal species, juvenile production

Petranka, J. W.; Murray, S. S.; Kennedy, C. A. Responses of Amphibians to Restoration of a Southern Appalachian: Perturbations Confound Post-Restoration Assessment. <i>Wetlands</i> <b>2003</b> , 23 (2), 278–290.	32	Tulula Wetlands Mitigation Bank, North Carolina, USA	wetland complex with ephemeral to permanent ponds	7 years	egg mass counts for focal species
Petranka, J. W.; Kennedy, C. A.; Murray, S. S. Response of Amphibians to Restoration of a Southern Appalachian Wetland: A Long-Term Analysis of Community Dynamics. <i>Wetlands</i> <b>2003</b> , 23 (4), 1030–1042.	107	Tulula Wetlands Mitigation Bank, North Carolina, USA	wetland complex with ephemeral to permanent ponds	7 years	egg mass counts for focal species
Petranka, J. W.; Holbrook, C. T. Wetland Restoration for Amphibians: Should Local Sites Be Designed to Support Metapopulations or Patchy Populations? <i>Restor. Ecol.</i> <b>2006</b> , 14 (3), 404–411.	19	Tulula Wetlands Mitigation Bank, North Carolina, USA	wetland complex with ephemeral to permanent ponds	7 years	egg mass counts for focal species
Rannap, R.; Lõhmus, A.; Briggs, L. Restoring Ponds for Amphibians: A Success Story. <i>Hydrobiologia</i> <b>2009</b> , 634 (1), 87–95.	52	six protected areas, Estonia	ephemeral to permanent natural and created ponds within protected areas	3 years	occupancy, species richness
Rothenberger, M. B., M. K. Vera, D. Germanoski, and E. Ramirez. 2019. Comparing amphibian habitat quality and functional success among natural, restored, and created vernal pools. <i>Restor. Ecol.</i> 27:881–891.	*	Jacobsburg State Park; Merrill Creek Reservoir Environmental Preserve; Lee and Virginia Graver Arboretum; Hellertown Site, New Jersey, USA	vernal pools, forest and field uplands	Merrill Creek - 28 years; Graver - unknown	reproductive success, metamorphs of focal species
Rothenberger, M. B.; Baranovic, A. Predator-Prey Relationships within Natural, Restored, and Created Vernal Pools. <i>Restor. Ecol.</i> <b>2021</b> , 29 (1): e13308.	12*	Jacobsburg State Park; Merrill Creek Reservoir Environmental Preserve; Lee and Virginia Graver Arboretum; Hellertown Site, New Jersey, USA	vernal pools, forest and field uplands	Merrill Creek - 28 years; Graver - unknown	reproductive success, larval survival

Sacerdote, A. B. Reintroduction of Extirpated Flatwoods Amphibians into Restored Forested Wetlands in Northern Illinois: Feasibility Assessment, Implementation, Habitat Restoration and Conservation Implications, Northern Illinois University, <b>2009</b> .	56	MacArthur Woods Forest Preserve, Illinois, USA	flatwoods ephemeral wetlands	4 years	species diversity
Sacerdote, A. B.; King, R. B. Dissolved Oxygen Requirements for Hatching Success of Two Ambystomatid Salamanders in Restored Ephemeral Ponds. <i>Wetlands</i> <b>2009</b> , 29 (4), 1202–1213.	57	MacArthur Woods Forest Preserve, Illinois, USA	flatwoods ephemeral wetlands	4 years	hatching success
Scott, D. E. Savannah River Ecological Laboratory, Aiken, SC. Personal Communication, February <b>2022</b> .	65	Savannah River Ecology Laboratory, South Carolina, USA	old borrow-pit turned ephemeral wetland	1 breeding season	successful development
Seigel, R. A.; Dinsmore, A.; Richter, S. C. Using Well Water to Increase Hydroperiod as a Management Option for Pond-Breeding Amphibians. <i>Wildl. Soc. Bull.</i> <b>2006</b> , 34 (4), 1022–1027.	47	Glen's Pond, Desoto National Forest, Mississippi, USA	wetland, longleaf pine upland	1 breeding season	reproductive success, metamorphs produced
Skelly, D. K.; Bolden, S. R.; Freidenburg, L. K. Experimental Canopy Removal Enhances Diversity of Vernal Pond Amphibians. <i>Ecol. Appl.</i> <b>2014</b> , 24 (2), 340–345.	17	Yale Myers Forest, Connecticut, USA	vernal pools	5 years	species richness, reproductive effort
Stevens, C. E.; Diamond, A. W.; Gabor Shane, T. S. Anuran Call Surveys on Small Wetlands in Prince Edward Island, Canada Restored by Dredging of Sediments. <i>Wetlands</i> <b>2002</b> , 22 (1), 90–99.	58	Prince Edward Island, Canada	small freshwater wetlands	2–7 years	abundance based on call surveys
Stiles, R. M.; La Rue, C. H.; Hawkins, M. J.; Mitchell, W. A.; Lannoo, M. J. Amphibian Response to a Large-scale Habitat Restoration in the Prairie Pothole Region. <i>J. N. Am. Herpetol.</i> <b>2016</b> , 2016 (1), 70–79.	106	Iowa, USA	Prairie potholes	0–≥ 18 years	occupancy of focal species
Waddle, J. H.; Glorioso, B. M.; Faulkner, S. P. A Quantitative Assessment of the Conservation Benefits of the Wetlands Reserve Program to Amphibians. <i>Restor. Ecol.</i> <b>2013</b> , 21 (2), 200–206.	88	Mississippi, USA	wetlands enrolled in WRP <sup>†</sup> , upland bottomland hardwood and agriculture	≥ 6 years	occupancy, species richness
Walls, S. C.; Waddle, J. H.; Faulkner, S. P. Wetland Reserve Program Enhances Site Occupancy and Species Richness in Assemblages of Anuran Amphibians in the Mississippi Alluvial Valley, USA. <i>Wetlands</i> <b>2014</b> , 34 (1), 197–207.	87	Arkansas & Louisiana, USA	wetlands enrolled in WRP <sup>†</sup> , upland bottomland hardwood and agriculture	3–12 years	occupancy, species richness

Zimmer, K. D.; Hanson, M. A.; Butler, M. G. Effects of fathead minnows and restoration on prairie wetland ecosystems. <i>Freshwater Biology</i> <b>2002</b> , 47 (11), 2071–2086.	*	Minnesota, USA	prairie potholes, uplands prairie grasses	5 – 10 years	relative abundance
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† United States Department of Agriculture Wetlands Reserve Program